

PRO SERIES

USER MANUAL

FOR THE

PS 19A

SINGLE CHANNEL BELTPACK WITH PGM (AUX) INPUT



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1.0 GENERAL DESCRIPTION

The PS 19A is a portable single channel user station, equipped with a volume controlled input for external audio (program) signals. It is housed in a strong ABS case and it is provided with a steel beltclip.

On the front panel are Volume (listen level) controls for the PGM and the communications signals and a Talk and a Call button with LED indicators.

Special attention has been paid to the intelligibility of speech. By applying low noise/high speed opamps, a speech presence filter and a specially developed high power bridged headphone amplifier, communication is very comfortable even in environments with a very high background noise level.

The unique ASL CALL system provides both a flashing LED and a very distinctive and characteristic sound signal. Smooth operation is guaranteed with the CALL button. A momentary push makes the red LED flash, whilst holding the button for two seconds will activate the CALL sound signal. The volume of the sound signal (buzzer) can be adjusted at the side panel.

A PGM input at the rear of the PS 19A, allows the connection of external audio signals which will only be heard at the local headset.

As an optional extra, an XLR-6 headset connector can be fitted, allowing the user to hear the intercom signal at the left headset can and the PGM signal at the right headset can.

Fully electronic switching increases reliability and allows for :

- 'soft' microphone ON switching, latched or momentary.
- remote Mic Mute facility.

2.0 UNPACKING

The shipping carton contains the parts below:

- * The PS 19A
- * User manual

If any are missing, contact your dealer.

ASL has taken great care to ensure this product reaches you in flawless condition.

After unpacking the unit please inspect for any physical damage and retain the shipping carton and relevant packing materials for use should the unit need returning. If any damage has occurred, please notify your dealer immediately so that a written claim can be initiated. Please also refer to the guarantee section of this manual.

3.0 INSTALLATION

This PS 19A will form a part of an existing or new intercom system, and connection to it is straightforward. There are no separate power connections or batteries to install, as the necessary DC voltages are derived from the intercom master station or power supplies, via the intercom connection cable.

To connect the PS 19A onto the intercom system, use professional flexible microphone cable with 2 wires and 1 shield only. Connect the system intercom cable to the LINE connector socket on the rear panel. Finally connect the listening headset plug into the HEADSET connector, also on the rear panel.

The PS 19A is fully protected against mis-wiring (reverse power) or short-circuit in the interconnect cables.

4.0 FRONT PANEL CONTROLS

1 PGM VOLUME control knob

This knob adjusts the level of the the PGM input signal as it will be heard in your own headset.

2 VOLUME control knob

This knob adjusts the intercom line listen-level for the headset.

3 TALK button

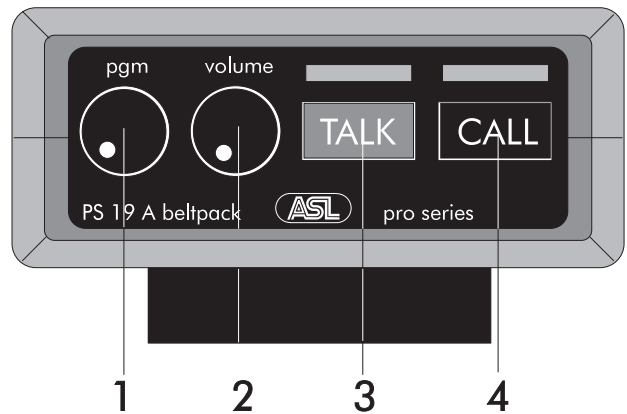
This push button activates the headset microphone, the large green LED indicates if the microphone is switched on.

Latched switching:

When a TALK button is pressed quickly, the microphone will be switched on, and is electronically latched. When pressed again, the microphone will be switched off.

Momentary switching:

When a TALK button is pressed and held, the microphone will be active, until the button is released. When the microphone is latched on, it can be muted by a Mic Mute from a PRO Series master station or power supply.



4 CALL button

This push button activates the call system.

A momentary push will send a CALL signal to all stations connected to the intercom channel and the call LEDS will start flashing.

Press and hold the button for 2 seconds will activate the call buzzer, if not muted.

After the CALL button is released the LEDS will continue to flash for further 2 seconds.

5.0 REAR PANEL CONNECTORS

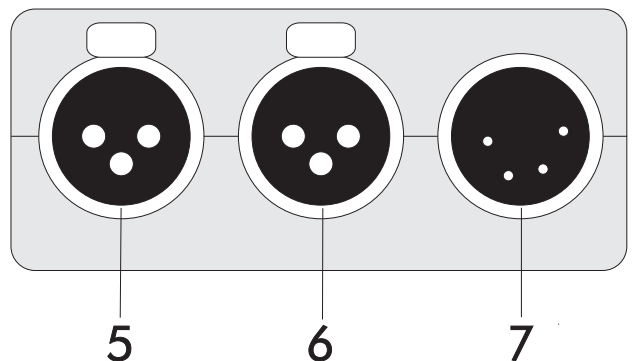
5 PGM connector

This PGM input is electronically balanced and accepts audio levels between -18dBu and +22dBu when configured on line level and between -38dBu and +2dBu when configured on mic level.

The selection mic or line level is determined by the place of two jumpers inside the PS 19A (see 7.0 Internal Controls). The unit is factory set on line level.

Pin assignments :

1. 0 V / ground
2. signal +
3. signal -



7 HEADSET connector

An XLR-4 type connector for the connection of the local headset. This must have a can impedance of 200 ohms or greater. The mic may be of the dynamic or electret type.

Pin assignments :

6 LINE connector

This XLR-3 connector is for connecting the PS 19A to the intercom system.

Pin assignments :

1. 0V / ground shield
2. +30 V power wire
3. audio wire
1. Shield mic. (GND)
2. mic. +
3. phones +
4. phones -

6.0 SIDE PANEL CONTROLS

8 SIDETONE trimmer

This trimmer adjusts the level of your own voice as you hear it in your headset.

Adjustment procedure :

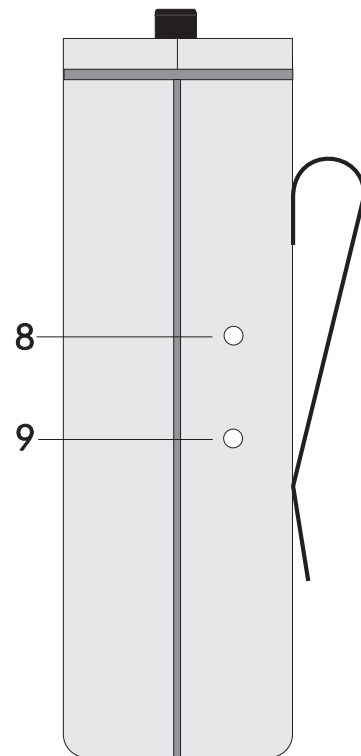
- set trimmer in start position : fully clockwise.
- switch off the microphone of all connected (speaker!) stations.
- switch TALK on of the PS 19A.
- turn up volume.
- speak into the headset mic.
- adjust listen level by turning the sidetone trimmer.

The operating area is between fully clockwise and minimum level.

Adjusting the sidetone does not affect the level of your voice as it is heard by other stations.

9 BUZZER VOLUME trimmer

This trimmer adjusts the volume of the internal buzzer, which is located behind the front panel. The buzzer is activated if you press the CALL button of the PS 19A or a CALL button of any other station (on the channel to which the PS 19A is connected), for longer than 2 seconds and the buzzers are not muted (on the master station or power supply).



7.0 INTERNAL CONTROLS

MIC GAIN

The mic gain can be adjusted internally by a trimmer, located on the lower PCB.

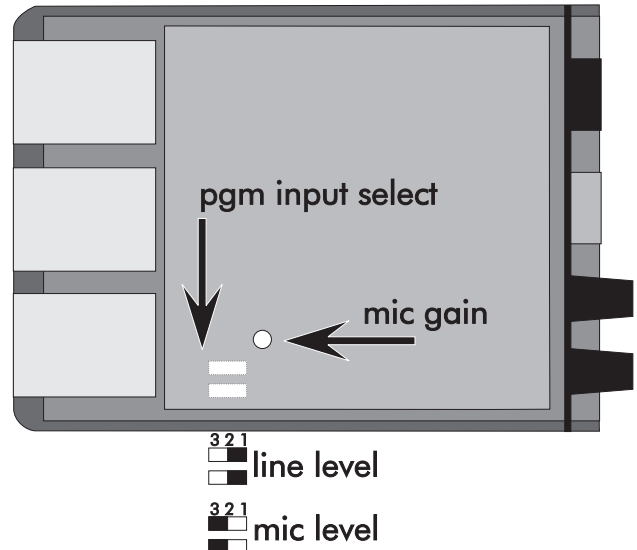
PGM LINE/MIC LEVEL selection

Two jumpers inside the PS19A determine the selection between MIC and Line level for the PGM input.

- Open the PS19A by removing the four screws on the underside.
- Remove the screws which fasten the upper PCB-board.
- Remove the upper PCB-board by lifting it up.
- On the upper PCB board you see two jumpers.

Jumper position for PGM input

- 1-2 Line level
- 2-3 Mic level



8.0 CABLING

For the PRO Series Intercom system the interconnecting cables are of the shielded two-conductor microphone cable type and the intercom line connectors are of the XLR-3 type. Audio and Call signals are on XLR pin 3, DC power is on XLR pin 2. XLR pin 1 is connected to the shield of the cable which functions as the common return for audio and power.

Since the audio signal is transferred in an **unbalanced ★** way, certain rules have to be obeyed when installing the cables of an intercom network. This is to avoid earth loops and to minimize power loss and the possible effect of electromagnetic fields.

These rules are:

- **Use high quality (multipair) cable.**
For interconnecting user stations, power supplies and accessories in an ASL Intercom network, use high quality shielded two-conductor (minimum 2x 0.30 mm2) microphone cable only.
In case of a multi channel intercom network, use high quality microphone 'multipair' cable only, each pair consisting of two conductors (minimum 2x 0.15 mm2) with separate shield. Multipair cable should also have an overall shield.
 - **Use flexible cables.**
Use flexible single and multipair microphone cable instead of cable with solid cores, especially when the cable is subjected to bending during operation or installation.
 - **Separate cable screen to XLR pin 1.**
The screen of each separate microphone cable and/or the screen of each single pair in a multipair cable, should be connected to pin 1 of each XLR-3 connector. Do not connect this cable screen to the metal housing of the connector or to metal wall boxes (outlets). See page 10: Earthing Concept.
 - **Cable trunks, connection boxes and overall multipair cable screen to clean earth.**
Metal cable trunks, metal connection boxes and overall multipair cable screen should be interconnected and, at one point (the 'central earthing point') in the intercom network only, be connected to a clean earth or a safety earth. See page 10: Earthing Concept.
 - **Keep metal connection boxes and cable trunks isolated from other metal parts.**
Metal housings for intercom cables and connectors should be mounted in such a way that they are isolated from other metal cable and connector housings and from any other metal construction parts.
 - **Keep cables parallel as much as possible.**
When two (multi channel) units in a network are connected by more than one cable, make sure that these cables are parallel to each other over the whole distance between those units. When using multipair cable, parallelism is ensured in the best possible way.
 - **Avoid closed loops.**
Always avoid that cables are making a loop. So-called 'ring intercom' should not physically be cabled as a ring. All cable routes should have a 'star' configuration, with the central earthing point (usually close to the power supply position) as the center of the star.
 - **Keep cables away from electromagnetic sources.**
Keep intercom cables away from high energy cables, e.g. 110/220/380V mains power or dimmer controlled feeds for spotlights.
Intercom cables should cross high energy cables at an angle of 90° only.
Intercom cables should never be in the same trunking as energy cables.
 - **Place power supply in a central position.**
In order to avoid unacceptable power losses, place the power supply as close as possible to where most power consumption occurs or, in other words, most user stations are placed.
 - **Connect ASL power supply to a 'clean' mains outlet.**
The ASL power supply may be connected to the mains power outlet to which other audio equipment is connected. Avoid using mains outlets which also power dimmer controlled lighting systems.
- In case of more complex installations, don't hesitate to contact us. Please send us a block diagram of the planned network with a list of all user stations and their positions, and we are happy to advise you on cabling lay out.

★ See Party Line, Technical Concept

9.0 PARTY LINE, TECHNICAL CONCEPT

ASL's PRO Series offers a complete two way ('full duplex') communications system.

Users of the system are connected via a 'party line'.

Master stations (with built-in power supply), belt packs, speaker stations and power supplies are interconnected via standard microphone cable. One wire is used as an audio line, one as a power line and the screen of the cable functions as earth/return.

Current drive is used for signal transfer. Each station utilises a current amplifier to amplify the microphone signal and place it on the common audio line where, due to the constant line impedance (situated in the power supply between XLR pin 3 and 1), a signal voltage is developed which can be further amplified and sent to headphones or loudspeakers.

This principle has three advantages:

- the use of a single audio line allows several stations to talk and listen simultaneously.
- due to the high bridging impedance offered by each station, the number of stations 'on line' has no influence on the level of the communications signal.
- power and audio to the intercom stations use the same cable.

The Call signal is also sent as a current on the audio line. It develops a DC potential over the line impedance which will be sensed by each station and interpreted as a Call signal.

10.0 GUARANTEE

This unit is warranted by ASL Intercom to the original end-user purchaser against defects in workmanship and materials in it's manufacture for a period of one year from date of shipment to the end-user.

Faults arising from misuse, unauthorised modifications or accidents are not covered by this warranty. If the unit is faulty it should be sent in it's original packing, to the supplier or your local ASL dealer, with shipping prepaid. A note must be included stating the faults found and a copy of the original suppliers invoice.

THIS PRODUCT WAS DESIGNED, DEVELOPED AND MANUFACTURED BY:

**AMPCO SOUND LAB BV
MAARSSSEN (UTRECHT) HOLLAND.**

11.0 TECHNICAL SPECIFICATIONS PS 19A

POWER CONSUMPTION

current (at 30 V DC)

25 mA quiescent

40 mA signalling

140 mA at max. output + signalling

PGM (AUX) INPUT

input impedance

30 Kohms (balanced line level)

4.6 Kohms (balanced mic level)

nominal input level

-18 dBu to +6 dBu (line level)

-38 dBu to -14 dBu (mic level)

max. input level

+22 dBu (line level)

+2 dBu (mic level)

MIC. PREAMP

mic. impedance

200 ohms

gain

40 dB - 70 dB (adjustable internally)

presence filter

+6 dB at 5 kHz

frequency response

200 Hz - 13 kHz (-3 dB)

V electret mic

+9 V DC

HEADPHONES DRIVER AMP

max. load

200 ohms

max. output level

14 V rms (200 ohms)

max. output power

0.5 W rms (each headset can)

INTERCOM LINE DRIVER

max. output current

3 mA rms

output impedance

> 150 Kohms

SIDETONE

rejection

0 - 30dB adjustable

BUZZER

max. SPL

106 dBA

DIMENSIONS AND WEIGHT

width

90 mm

height

38 mm

depth

124 mm

weight

310 g

GENERAL SYSTEM SPECIFICATIONS

intercom line impedance

350 ohms (1kHz)

2.2 Kohms (DC)

intercom line audio level

nom. -18 dBu

max. +4 dBu

dynamic range

80 dB

call send signal

+2.8 mA

call receive signal threshold

+2.4 V DC

supply voltage

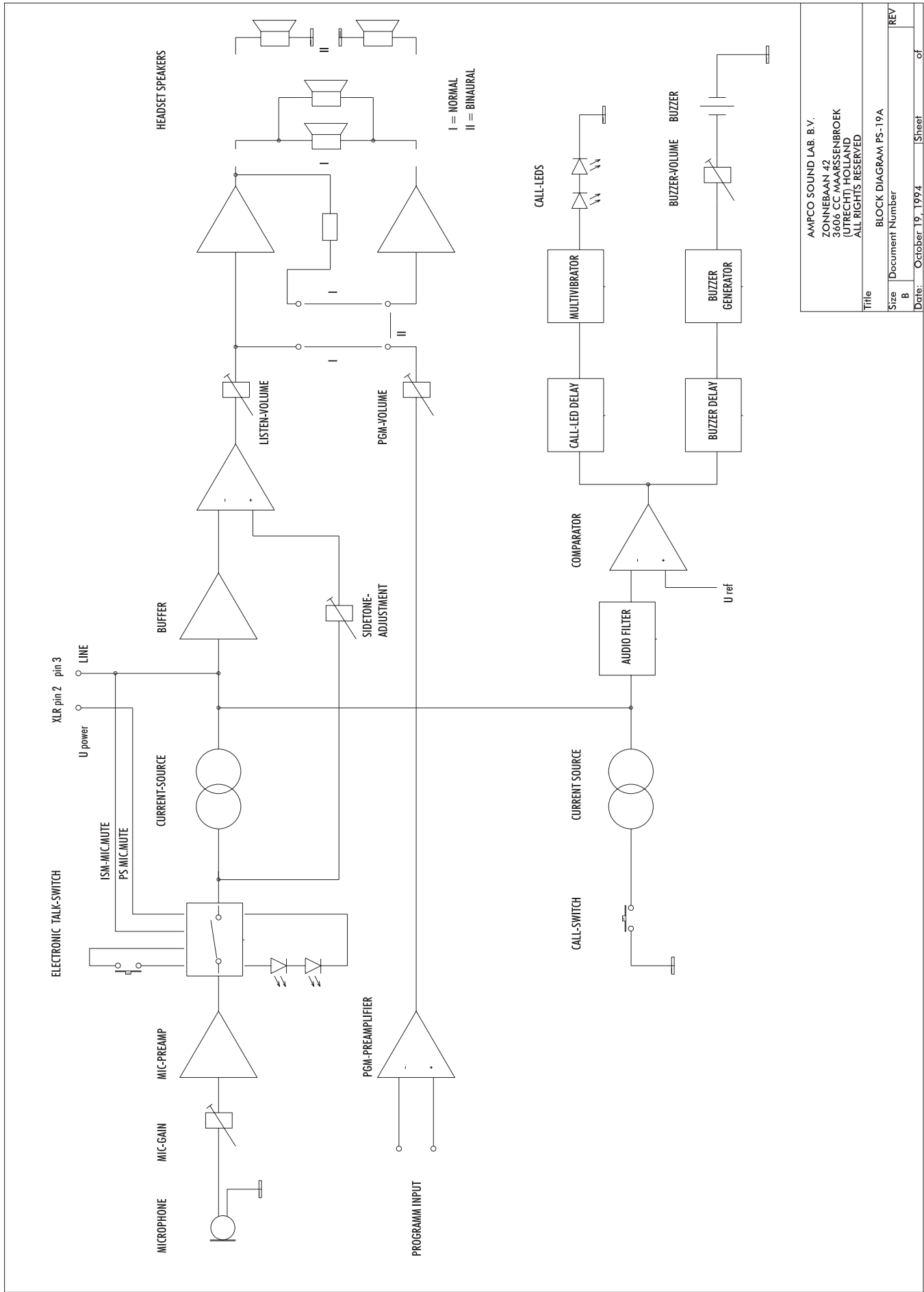
+30 V DC (12 V to 32 V)

mic mute power interrupt time

0.1 sec

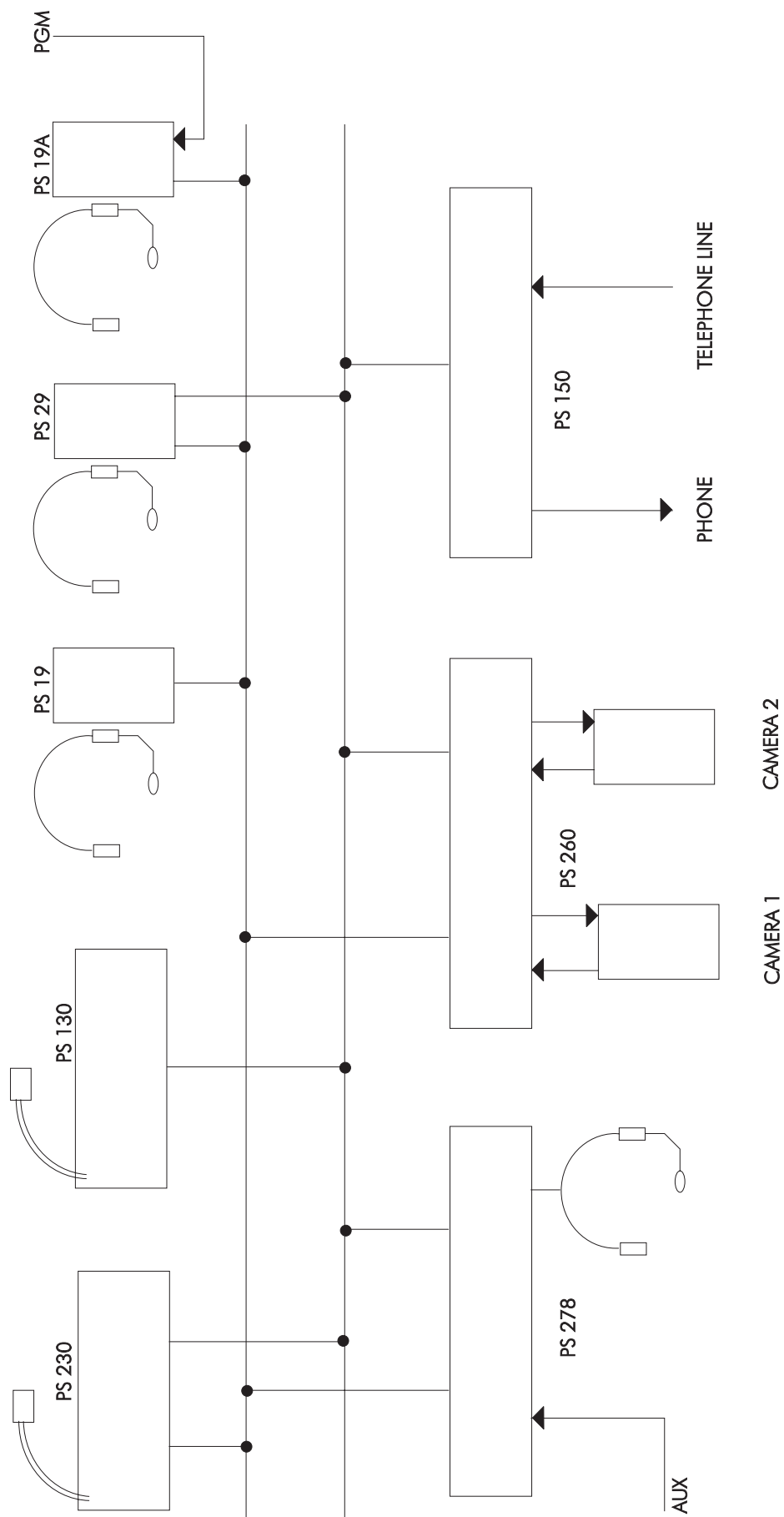
Note: 0 dBu = 775 mV into open circuit

ASL reserve the right to alter specifications without further notice.



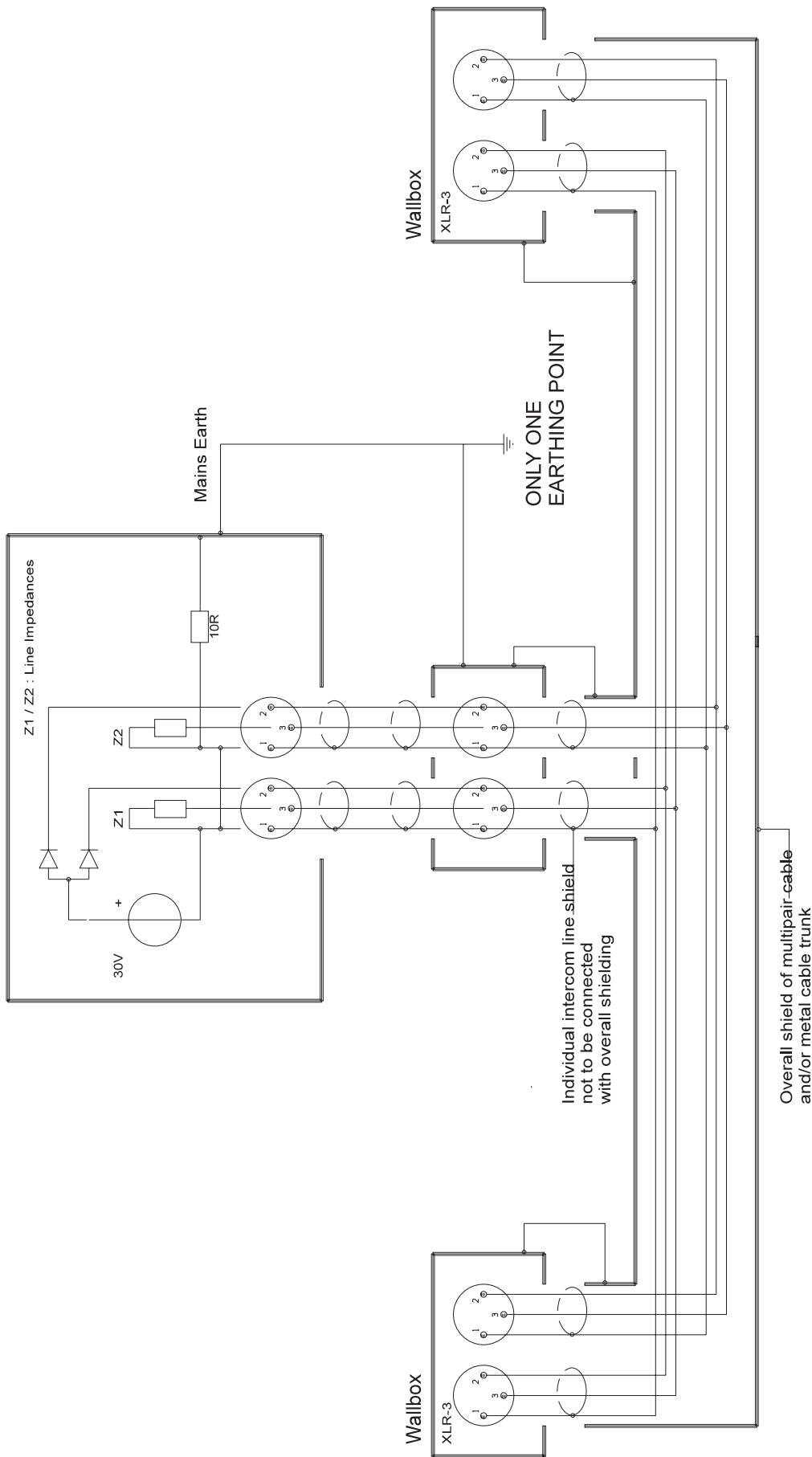
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Title	BLOCK DIAGRAM PS-19A
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Date:	October 19, 1994
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REV	



POSSIBLE SYSTEM CONFIGURATION OF A 2-CHANNEL INTERCOM NETWORK

POWER SUPPLY



EARTHING CONCEPT ASL INTERCOM

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